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Eleven reviews in this issue pertain to evaluation and accreditation. They are organized under these topics: (1) "Cost Analysis" presents review and synthesis information on the economics of vocational education and a research attempt to cost analyze 32 schools, (2) "Follow-Up Studies" summarizes half of a national survey in secondary trade and industrial education which sought comparative data for vocational and academic graduates, (3) "Behavioral Analysis" reports a development and evaluation project for self instructional methods in trade and industrial education, and (4) "Other Studies" includes two papers and a book chapter on program evaluation, an MDTA program evaluation report, a guidance program evaluation report, a teacher education program evaluation report, and standards and evaluative criteria for post secondary schools. "Plain Talk," a continuing column by the author, discusses "economic evaluation," "accreditation evaluation," and "self-evaluation" as well as priorities and directions which have recently come out of the U.S. Office of Education. The bibliography lists 39 additional items on the above topics. (EM)

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RESEARCH VISIBILITY

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Evaluation and Accreditation

Research Visibility questionnaire. At this writing a readership survey (10,000 sample) is nearing completion through the courtesy and cooperation of the Division of Comprehensive and Vocational Education Research DCVER), U.S. Office of Education. To the extent possible with the use of a postcard questionnaire, the face and substance of *RV* may change quite dramatically to capitalize on the suggestions of the survey respondents.

The survey sample was chosen through systematic selection, *i.e.* mailing a questionnaire to every fifth name on the AV JOURNAL mailing list. Reactions and suggestions from each *RV* reader are solicited. Admittedly, the JOURNAL readership is diverse and specialized; incomplete survey returns indicate readership preference to keep *RV* by nature and content *as it is*—but "keep it coming." Agree? The results of this survey will be published in a future AV JOURNAL.

Anyone for bound copies? *RV's* cover[illegible] since last September is indexed on page 34. Bound copies (Vol. No. 2) of this treatment will be available by late May for $1.50 to defray the costs of printing, binding, postage, and handling. There are limited copies of bound Vol. No. 1 still available for $1.25 (issues of September 1967 through May 1968). Both volumes may be purchased at a discount rate of $2.50; if 10 or more individual copies or sets are ordered, there is a special discount rate of 10 percent.

The focus of the profession. The February *Beacon* of the American Vocational Education Research Association raises a series of important questions related to professional concentration and progress for 1969: (a) a greatly increased membership in AVERA; (b) the publication of a research journal to reflect the professional voice of AVERA; (c) a program of scholarships for graduate students in occupational education; (d) a task force or consortium to review and bring attention to research areas of greatest potential; (e) liaison with the Office of Education, and (f) the organization of a professional placement service for AVERA members. The newsletter makes the point that the foregoing are some of the activities in which AVERA *might* engage to bring about focus of the profession; it leaves open-ended the question, "But what activities will we engage in?"

The professional soul-searching process is opportune. It is equally important to all members and their affiliations in the departments and divisions of the American Vocational Association. AVA's director of post-secondary development, John P. Hudson, in the AV JOURNAL (March 1969) made an analysis and explanation of the new organizational AVA

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EDITOR'S NOTE

Research Visibility is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The *Research Visibility* report synthesizes important projects which have been reviewed, selected and analyzed for their value to vocational, technical and practical arts educators, guidance personnel, and other leaders in education, manpower and related fields. A composite bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-7-070633, project 7-0633; "Synthesis and Application of Research Findings in Vocational Education").

George L. Brandon, professor in residence (Pennsylvania State University) is editor of *Research Visibility*. He is assisted in the preparation of these reports by Research Assistant Anne Ware.

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Studies Reported in Volume Two

(September 1968-May 1969)

DISADVANTAGED YOUTH: RURAL POVERTY AND THE URBAN CRISIS (SEPTEMBER 1968)

MANPOWER REPORTS
- The 1967 Manpower Report
- The 1968 Manpower Report
- National Goals in the 1970s

TRAINING YOUTHFUL OFFENDERS
- Project Challenge
- Vocational Training in Jail

CURRICULUM DEVELOPMENT PROJECTS
- Teaching Basic Talents
- Project PREP
- Citizenship Education
- Unskilled Union Members

SOCIOLOGICAL STUDIES
- Social Influences on Goals
- British Isles vs. United States
- Equal Employment Opportunities
- Equal Employment Practices

GUIDANCE AND TRAINING CENTERS
- Centers for Dropouts
- Job Counseling Center

VOCATIONAL EDUCATION FOR GIRLS AND WOMEN (OCTOBER 1968)

NEW DIRECTIONS IN BUSINESS EDUCATION
- Training Scientific Secretaries
- Acquisition of Typing Skill
- Clusters of Office Work Tasks
- Preservice Education

HOME ECONOMICS—IN SCHOOL AND COMMUNITY
- Wage-Earning Occupations
- Homemaker Services Film
- Child Development Training

FOOD SERVICE OCCUPATIONS
- Curriculum Development
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CAREER OPPORTUNITIES IN HEALTH SERVICES
- Illinois Program
- Bio-Medical Equipment Technology
- Mental Health Nursing
- Health Technology
- Medical Records Technician
- Teacher Education Institute
- Subprofessionals

WOMEN IN INDUSTRY
- (See Bibliography)

CAREER PATTERNS FOR WOMEN
- Women's Work Patterns

POST-SECONDARY AND ADULT EDUCATION (NOVEMBER 1968)

APPRENTICESHIP AND OTHER IN-PLANT TRAINING
- Apprenticeship Training
- Apprenticeship in Wisconsin
- Training of Maintenance Workers

OUT-OF-SCHOOL YOUTHS AND ADULTS
- Skills, Earning Capacity and Rural Manpower
- Common Behavioral Factors
- Retraining Under the MDTA

POST-SECONDARY INSTITUTIONS AND PROGRAMS
- Hospitality Education in Junior College
- Law Enforcement Education
- Manpower Utilization of the Unemployed
- Public Junior College Education

HUMAN RESOURCES AND VOCATIONAL GUIDANCE SERVICES (DECEMBER 1968)

CAREER DEVELOPMENT
- Floundering and Trial After High School
- Stimulating Career Exploration
- Career Simulation
- Presenting Occupational Information to High School Students
- Vocational Decision-Making of Community College Youth

SELECTION, PLACEMENT AND FOLLOW-UP
- How Fare MDTA Ex-Trainees?
- High School Cooperative Trainees
- Transition From High School to Work

OCCUPATIONAL TRENDS
- Projection of Occupational Trends
- Occupational Job Requirements

ADMINISTRATIVE PROBLEMS IN VOCATIONAL EDUCATION (JANUARY 1969)

NATIONAL AND STATE LEADERSHIP
- Job Training Programs
- Administration at the State Level
- Role of State Education Departments
- Planning and Programming

THE LOCAL ADMINISTRATOR
- Cooperative Work Experience Programs
- Junior College Advisory Committee

COST/BENEFIT ANALYSIS
- A Prospectus for Change
- Innovations in Education

PLANT AND FACILITIES
- A Comprehensive Concept
- Urban School Facilities
- Mobile Instructional Facility
- Facilities for Programs in Machine Trades

OTHER STUDIES
- Employment of Retired Military

RESEARCH IN VOCATIONAL AND TECHNICAL EDUCATION (FEBRUARY 1969)

RESEARCH ON RESEARCH
- Review of Research
- Priorities in Technical Teacher Education

SEMINARS AND INSTITUTES ON RESEARCH
- Research and Curriculum Development
- T&I Teacher Education
- Choice of Vocational Education as an Educational Opportunity
- MDTA Experimental, Demonstration Findings
- Agricultural Education

OTHER STUDIES
- Directive Teachers Versus Non-Directive Teachers
- Forecast for New Types of Technicians

THE VOCATIONAL EDUCATION CURRICULUM (MARCH 1969)

CURRICULUM DEVELOPMENT PROJECTS
- Identifying Technical Concepts of Workers
- Supermarket Merchandising and Management
- Electro-Mechanical Technology
- Hospitality Education Curriculum
- Curriculum Development

CURRICULUM WORKSHOPS
- Post-High School H.E. Education

LABORATORIES AND MATERIALS
- Pretechnical Post-High School Programs
- Small Engines
- Food Processing Technology

OTHER STUDIES
- Handbook for School Administrators

ON-GOING USOE PROJECTS

PREPARATION OF PROFESSIONAL PERSONNEL FOR VOCATIONAL EDUCATION (APRIL 1969)

SEMINARS AND WORKSHOPS
- Instruction in D.E.
- Experience in Agricultural Distribution
- Professional Internship
- Innovative Teacher Education Programs
- Teacher Education
- Teacher Education in Small Colleges

LEADERSHIP TRAINING
- National Program Development Institutes
- Institute for Young Farmer Education

TEACHER EDUCATION
- T&I
- Demand for Teachers
- Enlisted Men: a Potential Teacher Source

OTHER STUDIES
- State Divisions of Vocational Education
- Profiles of Trade and Technical Leaders
- Staffing
- Vocational Plant Facilities Specialists

EVALUATION AND ACCREDITATION (MAY 1969)

COST ANALYSIS
- Research on Economics of Vocational Education
- Vocational Program Administration in Secondary Schools

FOLLOW-UP STUDIES
- Process and Product of T&I High School Level
- Vocational Education in the U.S.

BEHAVIORAL ANALYSIS
- Effectiveness of Self-Instructional Methods

OTHER STUDIES
- Occupational Education Programs
- Self-Initiated Evaluation of Local Programs
- Vo-Ed for Disadvantaged Youth
- Program Evaluation

SUBJECTS PREVIOUSLY REPORTED
- Guidance Programs and Impact on Students
- National Adult Basic Education Teacher Training Program
- Standards and Evaluative Criteria

framework. The obvious problem is not new to the profession and its focus in AVA, but it is highly critical especially during this time of transition in which vocational and technical education has assumed major importance in the economy and welfare of our country and its citizens. Clearly, the challenge in AVA has become the marshalling of professional manpower on an intensive, *around-the-calendar* basis to the many critical problems of vocational and technical education these days. This activity must go far beyond the planning and conduct of annual professional meetings at the convention. This fact does not disparage the importance of the annual meeting, but it does indicate that action solely for convention purposes is woefully "too little, too late"!

Personnel of the AVA Department of Research and Evaluation. Current planning committee personnel who will supply research focus in vocational and technical education in AVA and the Divisions which they represent are:

Earl H. Knebel, Texas A & M University, College Station, Texas 77843. (Agricultural Education—two years)

Dennis Roley, Route 12, Box 752, Olympia, Wash. 98501. (Business and Office Education—one year)

Leonard Maiden, University of South Carolina, Columbia, S.C. 29208. (Distributive Education—three years)

Helen Nelson, New York State College of Home Economics, Cornell University, Ithaca, N.Y. 14850. (Home Economics Education—two years)

Leslie L. Gibbons, Colorado State University, Fort Collins, Colo. 80521. (Industrial Arts—one year)

V. E. Burgener, Board of Vocational Education & Rehabilitation, 405 Centennial Bldg., Springfield, Ill. 62706. (New and Related Services—two years). Chairman.

Aaron J. Mller, Ohio State University, 1900 Kenny Rd., Columbus, Ohio 43212. (Technical Education—one year)

Durwin M. Hanson, North Carolina State University, Box 5096, Raleigh, N.C. 27607. (Trade & Industrial Education—three years)

The above-listed personnel are in strategic positions through their Research and Evaluation Planning Committee and its representation on the Policy Committees of the AVA Divisions to construct and set in motion a Program of Work for the Department. Vocational researchers should take the initiative to communicate with the Committee and express ideas and judgments for the Program of Work and its implementation.

Sparking research in Vocational and Technical Education. Oklahoma State University, through its RCU and the leadership of William Stevenson and William Hull, with excellent cooperation of USOE's Bruce Blackstone and Otto Legg, sponsored and conducted the National Research Conference at Oklahoma City, Feb. 18-20. Proceedings (presentations and group discussions) of the conference will probably be available and will include a summary which will filter into the nine regional clinics scheduled for April and May, 1969.

It is apparent that the research community in vocational education has become wide and diversified in both its geographical and disciplinary relationships. The current low level of appropriations, as compared with authorizations of VEA '68, makes clear the need for militant action to provide increased resources for the research program.

There are numerous other growing pains, not the least of which are communications, coordination and the need for additional monetary support on the parts of the individual states. Increasingly, and far from being a new wrinkle in vocational education, the program and research related to it are becoming major parts of industrial development in the states. This fact is additional evidence that professional researchers have reached the stage where their total effort and planning for the future must be carefully organized and focused for maximum impact and activity upon research, diffusion and implementation problems.

TOPIC ONE: Cost Analysis

See Bibliography for information on availability of complete studies

Review and Synthesis of Research on the Economics of Vocational Education. J. Robert Warmbrod. The Center for Vocational and Technical Education, The Ohio State University. Columbus. November 1968.

This paper is one of a series of information analysis papers developed and released by the ERIC Clearinghouse on Vocational and Technical Education at The Ohio State University. It was written to introduce vocational educators to research and writings on the economics of vocational-technical education, to identify relevant issues and problems pertinent to research and to cite appropriate research and writings pertaining to these issues.

Warmbrod has placed emphasis on the description, review and synthesis of research and writings. Writings are reviewed which identify and describe a theoretical and methodological framework within which research on the economics of occupational education can be conducted and evaluated. Published critiques of the research which is reviewed are also cited.

There are five sections in the publication:

1. An overview of the major writings on the economics of education.
2. A description of the concepts and techniques of cost-benefit and cost-effectiveness analysis of public school and manpower training programs.
3. The results of research using cost-benefit and cost-effectiveness models (two sections).
4. Additional research relating to the economics of vocational-technical education.

Warmbrod has directed this publication to persons who are "actively involved in planning, conducting and evaluating vocational-technical education programs," and "for vocational education researchers and others interested in or conducting research pertaining to the economics of vocational-technical education."

A few of the one hundred documents cited in this publication are listed below to give an indication of the research reviewed.

Benson, Charles S. "Economics and Education." *Review of Educational Research* 37:96-102; February 1967.

Carroll, Adger B. and Ihnen, Loren A. *Costs and Returns of Technical Education: A Pilot Study.* Washington, D.C.: Office of Manpower Policy, Evaluation and Research, U.S. Department of Labor, July 1966, 52 pp. (ED 015 247, MF-$0.25, HC-$2.36.)

Davie, Bruce F. "Benefit/Cost Analysis of Vocational Education: A Survey." In Arnold Kotz (Ed.), *Occupational Education: Planning and Programming.* Volume Two. Menlo Park, Calif.: Stanford Research Institute, Sept. 1967, pp. 309-330. (ED 017 734, MF-$1.25 HC-$11.24.)

Kaufman, Jacob J.; Stromsdorfer, Ernst W.; Hu, Teh-wei; and Lee, Maw Lin. *An Analysis of the Comparative Costs and Benefits of Vocational Versus Academic Education in Secondary Schools.* Preliminary Report, Project No. O.E. 512. University Park, Pa.: Institute for Research on Human Resources, October 1967, 156 pp.

Kraft, Richard H. P. (Ed.) *Education and Economic Growth.* Proceedings of the First Annual Conference on the Economics of Education. Tallahassee, Fla.: Educational Systems Development Center, Florida State University, 1968. 189 pp.

Pearman, Elizabeth H. *Bibliography of Cost-Benefit Analysis and Planning-Programming-Budgeting.* McLean, Va.: Research Analysis Corporation, February 1966, 44 pp.

Warmbrod concludes that the research of economists shows the importance of education in the economic growth of ou. society, and, thus, he recommends that research on the economics of vocational-technical education be conducted within the theoretical framework of the economics of education.

Important questions within this context refer to the allocation of resources to, and within, the educational sector. Intelligent allocation of resources rests on the acquisition of adequate data through research. This data will influence policy decisions concerning the agencies, public schools or otherwise, which can conduct vocational education programs most efficiently. Vocational educators must, therefore, make themselves aware of the research and concepts of cost-benefit analysis, cost-effectiveness analysis, and planning-programming-budgeting systems.

Warmbrod notes that the findings of cost-benefit and cost-effectiveness studies are as yet inconclusive; there is, however, strong evidence that vocational education is a sound investment. In fact, economic studies of manpower training and retraining programs consistently indicate the value of this type of occupational education. He recommends cost-effectiveness analysis as the most appropriate technique for evaluating vocationl-technical education because it allows non-economic as well as economic benefits to be related to the costs of such programs. Since the research reviewed in this report indicates that there is insufficent cost and benefit data now available for meaningful analyses, Warmbrod asks that vocational educators make an effort to identify appropriate cost and performance criteria that can be used in cost-effectiveness analysis.

The research already conducted by vocational educators has been descriptive rather than analytical, and research conducted by economists has been limited in the identification and measurement of the benefits of vocational-technical education. Warmbrod suggests that greater joint efforts by the vocational educators and economists would yield more useful research pertaining to the effectiveness of vocational-technical education. He concludes with the thought that vocational educators "can make significant contributions in designing and conducting research pertaining to the economics of vocational-technical education."

An Analysis of Cost and Performance Factors in the Operation and Administration of Vocational Programs in Secondary Schools. Final Report. Richard L. Dueker and James W. Altman. American Institute for Research in Behavioral Sciences. October 1967.

Sixteen comprehensive and 16 vocational schools participated in a study to identify the kinds of cost and related data that can be obtained to aid planning and evaluating vocational education. The attrition of the schools in this sample, however, made the authors skeptical of any substantive results. Limited data were collected from the schools by means of questionnaires and interviews and from earlier studies. An organized body of performance data was not available at any of the schools, and available cost data did not readily lend themselves to meaningful analysis. Findings, if accepted at face value, suggested the following:

1. According to data reported by five vocational schools and four comprehensive schools, the general cost of education in comprehensive schools was lower than in vocational schools for 1961-62, but rose much more rapidly to approximate the cost in vocational schools by 1965-66.
2. Data from four comprehensive schools showed that the costs of academic-general (non-vocational) education were higher than for vocational education in comprehensive high schools for the fiscal years 1961-62, 1963-64, and 1965-66.

It did not appear likely that available cost or performance data would serve the long-range needs of educational evaluation and planning. It was recommended that the U.S. Office of Education undertake a feasibility and preliminary design study for an evaluation and planning information system which would encompass all education, not only vocational education.

Research and Implementation in Vocational Education. This publication was prepared by Gordon F. Law, professor of education, Department of Vocational-Technical Education, Rutgers-The State University. Dr. Law, formerly director of research for AVA, consulted with leaders in the field as he gathered this material. March 1969. 23 pages. Available from AVA. Price: 60 cents.

The Process and Product of T&I High School Level Vocational Education in the United States. Volume II: The Process. M. U. Eninger. Educational Systems Research Institute, Pittsburgh. April 1968.

This study, which began in 1963, describes the process and product of trade and industrial secondary school vocational education in the United States. Although there have probably been changes in vocational education as a result of the 1963 Vocational Education Act, the author believes that T&I vocational education has not changed substantially "in terms of the variables reported in this study"—that there are no data to prove otherwise.

The objectives of the study are listed below.

1. To describe post-graduation occupational and education experiences of a nationwide sample of T&I course graduates randomly selected from the classes of 1953, 1958 and 1962. The measures of description included:

- Time required to get the first full-time job.
- Methods used to get the first full-time job.
- Relatedness of first job to course studied.
- Reasons for failure to get jobs in field studied.
- Initial and terminal earnings on jobs held.
- Satisfaction ratings on jobs held.
- Relatedness of all jobs held to course studied.
- Geographic mobility of vocational graduates.
- Employment security since graduation.
- Employer stability since graduation.
- Earnings progression since graduation.
- Amount and type of post-high school education.
- Amount and type of college level education.
- Non-vocational measures reflecting personal growth.

2. To compare vocational and academic program graduates from the same schools and graduating classes in terms of post-secondary school occupational, educational and other relevant experiences, to determine if vocational graduates did better, not as well, or about the same as academic program graduates with a comparable amount of formal education.

3. To determine the effect of the following variables upon the graduate's occupational and educational experiences: (a) type of school attended; (b) size of school attended; (c) general unemployment rate at time of graduation, and (d) the race of the graduates.

The findings relevant to the above objectives were reported in Volume I of this study, "The Product." A summary of these findings is available in Volume II.

The objectives of the study presented in this volume are:

1. To describe the relevant school characteristics of a randomly drawn sample of 100 secondary schools offering a T&I vocational program.

2. To describe the relevant human resource characteristics of the vocational and academic program graduates selected for the follow-up study.

3. To identify what relationship exists between school and student characteristics on the one hand and the post-secondary school occupational and education experiences of T&I program graduates.

4. To provide general recommendations for action and research related to improving the efficiency and effectiveness of T&I vocational education in the United States.

The U.S. Office of Education directory *Preparatory Trade and Industrial Training Programs in Public Schools* was used as a source to identify the schools that offered a secondary school level T&I program; the author chose his sample only from those schools that offered three or more T&I vocational courses. There were 667 such schools, 100 of which were chosen at random on the basis of geographic region, total school enrollment and type of school. The school enrollment totals which were used as groupings were (a) less than 500; (b) 500-1500, and (c) more than 1500. The types of schools were vocational, technical, vocational-technical, and comprehensive.

Several forms were developed and administered to obtain the information desired, some of which were the School Principal Data Form, Vocational Course Data Form, Vocational Shop Data Form, General Classroom Form, Library Personnel and Services Form, Vocational Teacher Form, Counseling Personnel and Services Form, Placement Personnel and Services Form, and the Student Record Form. All the data were generated by school personnel, and a visiting team was utilized to finalize the data collection. These visitations were completed by the fall of 1964.

Eninger's general conclusion is as follows:

"Vocationals who work in their field of study do better than direct-to-work academic graduates on every occupational outcome measure. Those who do *not* work in their field of study do about the same as the academic graduates on all measures with this exception: They get their first job quicker, but have lower present earnings than the academics after 6 and 11 years out of school. The earnings difference is substantial at the 11-year point; a 25 cents an hour difference is equivalent to $1,040 per 52 week year."

New Routes in Vocational Education. The March 1969 issue of *American Education* has a section devoted to "New Routes in Vocational Education." Included are articles by Lowell A. Burkett, executive director of AVA; Leon P. Minear, director of U. S. Office of Education Division of Vocational and Technical Education; Richard C. Bixler, an Ohio-based freelance writer; Michael Russo, chief of the Planning and Evaluation Branch of the U. S. Office of Education's Division of Vocational and Technical Education, and Grant Venn, associate commissioner, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. (Reprints of this section are available from the Superintendent of Documents, U. S. Government Printing Office, Washington. D. C. 20402. Specify OE-80060. Enclose check or money order; price: 30 cents.)

See Bibliography for information on availability of complete studies

Evaluating the Efficiency and Effectiveness of Self-Instructional Methods for Selected Areas of Vocational Education. Final Report. John L. Coffey et al. Battelle Memorial Institute, Columbus Laboratories, Columbus, Ohio. February, 1968.

The major objective of this study was to evaluate the efficiency and effectiveness of self-instructional methods for selected areas of vocational education—automotive mechanics, cosmetology, drafting, electrical-electronics, machine trades, sheet metal and welding. The study was concerned with (a) skill identification along with the selection of those skills with broad applicability and (b) the investigation of self-instructional methods for teaching the selected skills.

A behavioral catalog was developed which contained those general behaviors common to trade and industrial education, and trade-specific examples of how these behaviors are demonstrated. Ten of these skills, chosen to serve as the basis for evaluations of self-instructional methods, are:

SELF-INSTRUCTIONAL UNITS

1. Hand tool operation—operation of screwdrivers and the hacksaw.
2. Oral communication—communicating courteously in cosmetology.
3. Auditory diagnosis—the use of sound as a diagnostic tool for auto engine malfunction.
4. Mathematical word-problem solving—(behaviors not trade specific).
5. Visualization—visualizing stationary three-dimensional objects from two-dimensional drawings.
6. Visual diagnosis—determining causes of tire wear.
7. Sensory discrimination—the identification of metals.
8. Performance evaluation—(how to do a good job in any trade).
9. Task performance—giving a basic haircut.
10. Two-dimensional form construction—lettering.

In the second phase of the study the self-instructional units were developed and evaluated. For various reasons, self-instructional units could not be developed for auditory diagnosis and mathematical word-problem solving. The remaining units were developed and evaluated; five of these evaluations supported the hypothesis that self-instruction is efficient and effective for vocational education. The authors feel that the evaluations of the units which did not support this hypothesis were influenced by problems "not associated with self-instructional methodology per se."

Three major conclusions were reached: (a) primary vocational skills do not exist at the level of trade and industrial education; (b) when feasible, instruction should be conducted with non-textual, or simplified textual, materials to take advantage of the favorable attitude of the students toward self-instructional materials, and (c) self-instruction is a significant methodological way to improve the efficiency and effectiveness of vocational education.

Eight specific recommendations for the area of self-instructional methods are presented below in the words of the authors:

1. Perhaps the most pressing requirement of vocational education is specification of educational objectives in terms of student behaviors that are observable and measurable. It is recommended that behavioral specification of objectives be given very high priority.

2. The potential for self-instructional units and systems for vocational education is perhaps, at the present time, greater than for any other educational area. It is recommended that development, evaluation and implementation of such systems be undertaken at an increased rate.

3. A problem of increasing importance in vocational education is the widening discrepancy between what students can do upon exiting from the educational system and real-world performance requirements. It is recommended that efforts designed to establish and implement methodologies for reducing these discrepancies be given serious consideration.

4. It appears that a practical approach to improving the efficiency and effectiveness of vocational education would be the development of instructional units (preferably employing self-instructional methods) plus the adaptation of existing instructional units for those instructional areas commonly found in many trade programs. For example, imaginative, multi-media instructional units on common hand tools or power tools would have wide applicability in vocational education. It is recommended that efforts directed toward making such units available and directed toward implementing them within vocational education be undertaken.

5. Problems exist concerning how to formulate effective and efficient trade programs capitalizing upon existing instructional materials and methodologies. It is recommended that research and developmental efforts directed toward establishing flexible, general procedures for formulating such programs be undertaken.

6. Vocational education appears to have some very special requirements such as improving certain fairly basic skills (e.g., reading). It is recommended that these special problems and their implications be investigated and resolved.

7. Because of the very specific behaviors that are the instructional objectives of vocational education, it is recommended that high priority be given to specific efforts designed to improve specific methods required to bring about these behavioral changes.

8. Finally, because so many of the instructional materials of vocational education are oriented toward subject matter rather than student behaviors, it is strongly recommended that future efforts toward instructional-material development be concerned with making these materials at least partially oriented toward student behaviors.

The value of self-instructional materials is widely accepted. The role they can play in assisting vocational education to meet the needs of the economy can not be overemphasized. With increasing demands for skilled workers in all areas and the resultant pressures for more teachers, the use of self-instructional materials is vital.

The Evaluation of Occupational Education Programs. Jerome Moss, Jr. University of Minnesota. Research Coordination Unit in Occupational Education. Technical Report. September 1968.

Moss prepared this paper to encourage productive evaluation studies by exploring program evaluation and providing a conceptual framework for evaluative efforts in vocational, technical and practical arts education. His treatment covers the following areas of concern: (a) the importance of program evaluation; (b) some causes of past inactivity in evaluation; (c) a definition of program evaluation; (d) program outcomes (or evaluative criteria); (e) program characteristics; (f) two roles of program evaluation; (g) evaluation as a part of the educational change process, and (h) some research approaches to evaluation.

Evaluation is important, according to Moss, because it enables educators to make intelligent decisions about program development and operation theories and practices. "We have a moral obligation to students to provide them with the best programs possible. . . . We have a social obligation (to use the public investment) with the greatest efficiency for society's ultimate welfare . . . (and) we have a scientific obligation (to develop) a science of instruction, without which we shall continue to operate by hunches, authority, tradition, and personal experience."

Why then, Moss asks, have there been so few evaluative studies since the passage of the Vocational Education Act of 1963? Political, social, economic, and technical impediments have caused this inactivity. Now, however, the Advisory Council on Vocational Education demands greater efforts at evaluation. In fact, social scientists from other disciplines are interested in the evaluation of manpower training systems. We must evaluate our own programs now to insure that the proper criteria and methodology are employed, and to insure that the decisions made will properly reflect our educational perspectives.

In his definition of program evaluation, Moss describes the students as individuals, the program with different characteristics, and the effects of the outside environment upon the students. The interaction of these three produces the actual outcomes which are "student or ex-student behaviors, and the effect of those behaviors on the school, the community, the economy, society, etc. and other direct consequences of the program for teachers, administrative patterns, other students, etc." These actual outcomes must then be compared to expected outcomes, or actual outcomes from other situations, so that the merits of the program under observation can be judged.

The program outcomes, or evaluative criteria, should be measurable and Moss presents guidelines for a classification schema which can be applied, the main points of which are listed below:

1. The criteria must be the products of instruction.
2. The criteria should include the potential outcomes relevant to each of the philosophies under which vocational, technical or practical arts programs might be operated, e.g., to relieve poverty, to meet a labor shortage, to meet a continuing labor need.
3. The expected outcomes should be stated at several levels from the very general to the very specific, e.g., from philisophical statements to items on a questionnaire.
4. The programs should be consistent with the philosophical positions, and should be flexible enough to reflect variations in program characteristics.
5. The programs could be easily weighed if monetary values were assigned to program outcomes so that per-student-dollar-benefits of different programs could be directly compared. The difficulty is in obtaining monetary values which are valid. Moss suggests an alternative of arbitrarily assigning monetary values, in a consistent manner, of course. The classification schema itself should contain a time axis (representing time elapsed since the education was provided), a target axis (distinguishing between expected student outcomes, and indirect, secondary, or feedback outcomes anticipated in other people, agencies or institutions), and a type axis (distinguishing between types of expected outcomes, e.g., educational, psycho-social and economic criteria).

According to Moss, the program characteristics, or sub-systems, include the teacher, content and content organization, methods and techniques of instruction, facilities, etc., and the effects of these sub-systems may be included as independent variables in any evaluation study. In this part of his discussion Moss notes that comparisons of the sub-systems should be made in such a manner that program outcomes can be related to individual characteristics. He also emphasizes the importance of measuring the costs of resource and time inputs in each program, stating that the cost-per-unit outcome is a measure of the efficiency of a program and makes it possible to compare different programs.

Moss describes two basic sets of questions that may be answered by a program evaluation, depending upon the reasons for conducting the evaluation. They are such questions as (a) "How well is the program accomplishing what it set out to do?" and "How can it be improved,?" and (b) "Which of two programs is better for my purpose?" "What could I gain and lose by adopting the new curriculum?" The decision as to which answers are being sought will be one determination of the criteria to be used in an evaluation study.

Moss describes some research approaches to evaluation such as formative evaluation, expert and self-evaluations, follow-ups, experiments, interrupted time series, and regressional analysis. He concludes his paper by reviewing his recommendations for the types of data that should be measured, and then stating that the states will have to decide which variables they want to utilize, how they will measure them, and how they will collect, store and retrieve the measures.

Strategy and Methodology for Self-Initiated Evaluation of Local Programs of Vocational Education. Harold M. Byram. Michigan State University. 1968.

This paper was presented by Byram at the Conference on Evaluating Vocational and Technical Education, which was held in Atlantic City, N.J. on Oct. 8, 1968. The Conference was sponsored by the W. E. Upjohn Institute for Employment Research. Byram focused his attention in this paper on evaluation at the local district level and the comprehensive secondary and post-secondary schools therein; it is not meant for application to large metropolitan systems. He also placed the emphasis on vocational rather than technical education, defining vocational as "specialized education designed to prepare future workers for initial employment or to enable workers to improve and progress in their vocation." However, he recognizes the close relationship of all formalized education and guidance to occupational preparation, and thus indicated he was also speaking of "occupational education," defined by Herbert M. Hamlin as "education designed to contribute to occupational choice, competence and advancement."

Byram used the term "program" to mean all the curricula and other provisions of a school system which has a major emphasis on vocational objectives. His basic strategy and methodology have several underlying assumptions: (a) there is a desire on the part of the school systems and local communities for self-initiated evaluation of their programs, using a systematic and organized approach; (b) the one overriding purpose of the evaluation is to improve the "scope, availability, quality and/or some other basic goal" in the existing program; (c) there is a recognition of the usefulness of outside consultative services, and (d) the evaluation will be a major staff and citizen project which, it is hoped, will become a permanent activity.

The strategy of local program evaluation which Byram advocates concerns itself with obtaining competent local leadership to take the responsibility for organizing and directing the effort. The leader chosen should already be recognized as competent in a coordinating role for the school vocational education program; he should be accountable to a chief or assistant school administrator, and he should have an assistant or research associate to make up the local leadership team.

Byram emphasized that the program should be a cooperative effort of those responsible for the program (teachers and administrators) and those affected by it (employers, former students and citizens). The output of the program will be the main concern, but the input will be evaluated also in order to see how it can be improved to produce better outcomes.

The major objectives of the program have to be identified and the criterion questions which are related to the objectives must be set up, keeping in mind that the questions should be concerned with the local situation, and not the national scene.

"The evaluation will be as good as the methods used in obtaining sufficient, accurate, valid information bearing on criterion questions, and no better," Byram remarked as he introduced his discussion on the methodology of local program evaluation. The essential elements of the methodology include administrative commitment or adequate support for the costs and time of the evaluation and consideration of recommendations that may result; competent faculty and citizen leadership; faculty-citizen understanding of the philosophy of vocational education; the organization and use of committees, and the provision of time for the faculty and their leaders to work at the task.

The first task is to orient the faculty and the community; the second is to form a staff committee to direct the work. The staff committee will decide on the framework of the evaluation effort and list the objectives of the evaluation and the activities to be conducted. The next step is to use the advisory services of citizens' committees and consultants to gather the information necessary to answer the criterion questions. The final step is to interpret the information and arrive at answers to the criterion questions which will be translated into program improvement recommendations. The recommendations will be made to the board of education, the chief administrator and his assistants, and the teachers.

In conclusion, Byram discussed methods of working with faculty members and obtaining citizen involvement in the evaluation program. He also presented specific recommendations for follow-up of former students, interpreting student and employer information and opinions, interpreting the needs of the society, and studying the local administrative structure.

(Two studies of interest in this area which were written by Byram are *Evaluation of Local Vocational Education Programs, Second Edition: A Manual for Administrators, Teachers, and Citizens*, March 1968; and *Evaluation Systems for Local Programs of Vocational-Technical Education: A Developmental Education Research and Teacher Education Program Based on a Clinical School Concept*, October 1968. (See bibliography for further details.)

An Evaluation of Vocational Education for Disadvantaged Youth. John J. Austin and Donald A. Sommerfeld. The Public Schools of the City of Muskegon. Muskegon, Mich. April 1967.

The Department of Labor describes a disadvantaged youth as an individual between the ages of 16 and 20 years who is out of school, out of work, comes from a seriously impoverished environment and cannot benefit from regular occupational training. Aware that the number of such individuals is increasing yearly and the number of low level entry jobs in the United States is declining, the federal government has launched a major rehabilitation effort to train the disadvantaged for jobs. One such program is funded under the Manpower Development Training Act of 1966.

Austin and Sommerfeld express the importance of assessing the progress of each program in order to raise the level of quality of the services offered and fill the major gaps in the total effort. Research in this area has been lacking, due to the newness of the programs. Clear-cut guidelines and evaluation models are also lacking.

The authors hope that this report will "serve as both a model for measuring the effects of a program geared to train disadvantaged youth and will also provide meaningful information about the value of such training programs." This report is focused on the evaluation of the effects of the basic and vocational education program that is provided by the Muskegon Area Skill Training Center for disadvantaged youth, under the youth provisions of the MDTA.

Austin and Sommerfeld attempted to describe four major areas:

1. Evaluation of change in intelligence and aptitudes.
2. Evaluation of change in basic skill achievement.
3. Evaluation of change in personality characteristics.
4. Evaluation of change in occupational status, including cost-benefit analysis.

Pre-training testing was performed on 189 youths from April through July, 1965. Post-training testing was accomplished from April through July, 1966 on 180 (95 percent) of the original group. The control group, which consisted of 41 non-trainees and 48 youths who dropped out of the program during the first three months, were tested at the same time with 81 (91 percent) of the group who took the first test being available for the second test. Instruments used in the testing were the WRAT (Wide Range Achievement Test), the WAIS (Wechsler Adult Intelligence Scale), and ICL (Interpersonal Check List—Muskegon Form), the GATB (General Aptitude Test Battery), and the "Clinical Factor Analysis of the WISC, WAIS, and WRAT Scales," by Joseph Jastak.

The accompanying chart briefly indicates the hypotheses put forth in this study and the resultant findings.

HYPOTHESIS	CONFIRMED	NOT CONFIRMED
I. *Primary Objective:* Assessment of the overall effect of vocational and basic education on disadvantaged youth.		
1. Mean scores on the tests will be significantly higher after training.	XXX	
2. Mean scores on the tests will be higher for trainees than for non-trainees.	XXX	
II. *Secondary Objective:* Identification of pattern of change taking place in the different categories of disadvantaged youth that enrolled for training.		
1. Girls will how greater improvement than boys in all areas of change measured, except performance I.Q.		XXX
2. Older trainees (19-21) will show greater improvement than younger trainees (17-18) in all areas measured.		XXX
3. Trainees with higher formal education (grades 10, 11, 12) will show greater improvement than those with lower formal education in all areas measured, except basic achievement.		XXX
4. Trainees with high original I.Q. will show greater improvement than trainees with low original I.Q. in all areas measured.		XXX
5. Trainees with high original altitude or potential I.Q. will show greater improvement than trainees with low altitude, or potential I.Q. in all areas measured.		XXX
6. Trainees having dependents will show greater improvement than trainees without dependents in all areas measured.		XXX

Austin and Sommerfeld presented some interesting conclusions which are summarized below.

1. Research should be carried out to determine if more of the annual school dropouts would enter a vocational-occupational training program if space were available and if 16 year olds who are presently not eligible due to the one year out-of-school requirement could profit from training, and if longer (two years or more) training programs would be beneficial for some trainees.
2. Future research designs should provide for control groups of students who stay in high school and who are not interested in skill center training. Long range follow-up is recommended to determine the relationship of training to overall increased social competency.
3. An evaluation unit with competent staff should be part of every educational program in order to measure and appraise any behavioral outcomes.
4. The need is recognized for tests and measuring instruments that can be easily administered, individually or in small groups, and which do not require reading ability and which can provide profile scores and be computer-scored for research purposes.
5. Research is needed on the relationship of basic education, particularly in the language skill and value areas, to employment and income.
6. Research is also needed on the concept of disadvantagement as a process which varies from one developmental stage to another and from one individual to another. This research should define and reveal ways to measure, prevent intervene, and provide compensatory services.
7. The motivational aspects of money, in the form of a training allowance, as opposed to grades or scholarship honors or awards, could be investigated.
8. Training programs should be studied to determine curricular qualities which are common from one center or project to another to determine how they influence learning and behavior.

Program Evaluation. John K. Coster and Loren A. Ihnen, North Carolina State University, Raleigh. Pages 417-433, Review of Educational Research, October 1968. American Educational Research Association, Washington, D.C.

In this chapter of the issue of *Review of Educational Research* which is devoted to vocational, technical and practical arts education, Coster and Ihnen present a discussion of research related to program evaluation conducted since 1962. The two most significant national studies, according to Coster and Ihnen, are the report by the Panel of Consultants on Vocational Education, U.S. Department of Health, Education, and Welfare, in 1963, which criticized the lack of research in vocational education; and the report by the Advisory Council on Vocational Education which, in 1968, discussed the "inadequacy of state and national evaluations for understanding what had occurred under the Vocational Education Act of 1963."

The increase in federal expenditures authorized by the 1963 Act carried with it the obligation to evaluate the

impact of these federal investments on people and programs. Melvin L. Barlow discussed this need in his article, "Why National Reviews?," which appeared in the *American Vocational Journal* 42:10-11, December 1967.

The authors note that the majority of the research conducted during this period was either master's or doctor's theses or unpublished staff studies which are not included in this *Review*. There were, however, several studies conducted, some of which are given mention below.

Max U. Eninger conducted a large-scale investigation of the product of vocational and technical education at the secondary school level, the results of which are reported in *The Process and Product of Technical and Industrial High School Level Vocational Education in the United States: The Product.* Pittsburgh, Penna., American Institutes for Research, 1965, 445 pages.

Jerome Moss, Jr., studied *The Influence of Industrial Arts Experience on Grades Earned in Post-High School Trade and Technical Curriculums.* Minneapolis, Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, 1966, 38 pages.

Harold M. Byram prepared a guide for administrators and teachers titled *Evaluation of Local Vocational Education Programs.* East Lansing. Bureau of Educational Research Services, Michigan State University, 1965, 81 pages.

In addition, Coster and Ihnen present a detailed review of three major cost-benefit analysis studies of vocational and technical training programs. They are *Vocational Education: A Study of Benefits and Costs,* by A. J. Corrazzini, Princeton University, 1966, 126 pages; *The Role of Technical Schools in Improving the Skills and Earning Capacity of Rural Manpower: A Case Study,* by Svetozar Pejovich and William Sullivan, Office of Manpower, Policy, Evaluation, and Research, U.S. Department of Labor, Washington, D.C. September 1966, 19 pages; and "Costs and Returns for Two Years of Post Secondary Technical Schooling: A Pilot Study," *Journal of Political Economy* 75:862-73, by Adger Carroll and Loren A. Ihnen, December 1967.

TOPIC FIVE: Studies Previously Reported

See Bibliography for information on availability of complete studies

Guidance Programs and Their Impact on Students: A Search for Relationships Between Aspects of Guidance and Selected Personal-Social Variables, by Armas W. Tamminen and G. Dean Miller. University of Minnesota, Duluth, Minn. 1968.

The rapid expansion of guidance programs in American secondary schools within the past decade led to this study. It begins the search for evidence of the total impact of these programs on the students, in the form of investigation of relationships between guidance programs in various secondary school settings, and personal and social variables thought to be influenced by guidance efforts. The strength of the relationships between guidance activities and presumed outcomes of guidance were measured. The hypothesis was that students exposed to varying amounts of levels of guidance activity will achieve guidance objectives in varying degrees. There was no attempt to assess the impact of counseling or any other single guidance function on specific students; a random sample of seniors was selected to represent the impact of guidance on the entire student body.

The two major tasks undertaken were to identify and measure various aspects of guidance programs, and to search for interrelationships among these measures. Using approximately 200 measures, the authors collected data on guidance efforts, situational variables that might have bearing on guidance outcomes, and presumed outcomes of guidance. There are statistics in the report on 84 schools, 1,116 seniors, 869 graduates, 151 dropouts and the counselars and guidance programs. All the seniors took tests and both seniors and school staff filled out information and opinion questionnaires; other information was obtained from State Department of Education files, the Statewide Testing Program, and the schools. The variables were classified as "situation," "input" and "outcome," and were divided into subcategories with the following titles:

1. *Six "situational" scales*—large size; academic atmosphere; culturally advantaged community; proximity to post-high school training, and advantaged family.
2. *Eight "input" scales*—low level of guidance activity; problem-centered counseling; superficial student-counselor contacts; emphasis on nonguidance duties; good counselor image; new program with minimal facilities; discontented counselor with unimproved program; well established and supported program.
3. *Eight "outcome" scales*—general satisfaction with guidance; good holding power; high general and academic self-concept; high incidence of continued education; lack of helpfulness of guidance, as recalled; vocational immaturity and underachievement; diffident vocational aspirations; unrealistic goal setting.

Using a stepwise multiple regression technique, the best combination of four to six predictor variables was found for each of the outcomes; intercorrelations and multiple regression findings were found for one-counselor schools, for high ability and low ability schools, and for selected data from the follow-up study conducted a year later.

1. Differences in the personal-social variables ("outcomes") result from many different factors, none of which is dominant.
2. The best-established guidance programs which have a high level of activity and contact with the students are generally found in areas where there are students of high ability who come from advantaged homes in advantaged communities, and the school climate encourages scholastic excellence.
3. Where the students have low ability and the climate is anti-academic, the counselors tend to spend more time with problem students and little time with the student body as a whole.
4. There are two guidance factors which are relatively

independent of economic and environmental factors: "Good counselor image" and "superficiality of student-counselor contacts."

5. The one guidance "input" which has effects is "counselor image," or the personality of the counselor as seen by the student, e.g., acceptance, respect for and interest in students and staff, openness and warmth, reaching out to the students.

6. Other counselor variables that are related to outcomes are the number of professional organizations to which the counselor belongs and the manner in which he schedules his time among his duties. Guidance program variables that relate most to outcomes are student-counselor ratio, longevity of the program, and budget for guidance.

7. Satisfaction with the guidance program among administrators, teachers and students is largely a function of the amount of support of the program. This relationship is strongest in low-ability schools.

8. Most of the "outcomes" measured appear to be only slightly, if at all, related to guidance efforts. Personal, economic and other "situational" factors seem to have more bearing on these outcomes.

9. One year after graduation, average training success is related to average satisfaction with a person's life situation; neither is related to guidance efforts.

The modest relationships between guidance programs and expected results leads to a serious concern about the amount of impact formal guidance efforts have on students. However, students continue to have problems, and the authors imply that the guidance programs should be improved, not removed. They also consider the question of whom the guidance program is for—the very small proportion of students who avail themselves of it, or *all* the students? The authors' point of view is that the program should benefit all students, and they have, accordingly, defined the counselor's role to include the traditional assistance to those individual students who experience difficulties, as well as the provision of leadership in making the school environment conducive to student development, and "the provision of a strong, warm, humanizing influence in the midst of the complex business of mass education."

To facilitate necessary changes, the authors ask that counselors carefully consider the basic reasons for having guidance programs, their own roles in the programs, the relative value to time spent in remedial, preventive and developmental aspects of guidance. Counselors should search for ways to "upgrade their research and human relations skills and interpersonal sensitivity and effectiveness in order to equip themselves to play a larger role in improving and humanizing education as well as helping individuals."

One of the input factors in one-counselor schools, was "teacher-oriented guidance," with the variables loading into it being the number of years the person had been a teacher prior to becoming a counselor, and a negative-loading coming from the amount of time spent in personal counseling. This is of interest because the loadings indicate that these two phenomena are related and because the factor was related (a) to perception of the counselor as unhelpful (b) to underachievement, and (c) to under- and over-aspiration. Such a finding needs cross-validation, but it does have implications for the discussion within the profession about the importance of teaching experience for counselors.

A further recommendation of the authors is that counselor educators look at their programs with a view toward re-examining the basic ideas, rather than merely adding courses to lengthen the preparation time. A way needs to be found to make inservice training attractive enough to encourage counselors to improve their skills. They strongly urge that school administrators recognize the possibility that counselors can play an exciting, broad and effective part in facilitating the whole educational endeavor; administrators should provide strong support and encouragement to such participation, for example, through supporting inservice training.

In summary, the authors recommend that guidance counselors think deeply about the value of allotting less time and effort to individual students in attempts to deal with problems caused by negative influences in the school environment, and allotting more effort toward doing all he can to bring about changes which facilitate healthy growth. The authors recognize that action of the superintendent, school board, or other school authorities is necessary to bring about many of the needed changes; but, counselors can use their own knowledge of the situation and their research and human relations skills to assist in providing a needed impetus for the desired changes.

Evaluation and Final Report: National Adult Basic Education Teacher Training Program, Summer 1966. Two Volumes. Robert J. Pitchell. National University Extension Association. Silver Spring, Md. June 1968.

At the time the National Adult Basic Education Teacher Training Program was conducted, approximately 24 million Americans over age 18 had less than an eighth grade education. Surveys conducted in 1962 and 1963 had indicated that the median level of education for the unemployed was 10 years; one-fourth had not completed the eighth grade; and two-thirds had not finished high school.

The Economic Opportunity Act of 1964, the Adult Education Act of 1966 and the Elementary and Secondary Education Act of 1966 provided the legislative means to combat this deplorable condition by encouraging basic educational programs for adults to help them "overcome English language limitations, to improve their basic education in preparation for occupational training and more profitable employment, and to become more productive and responsible citizens."

Funds were allotted among the states for adult basic education (ABE) programs, and also some funds were set aside for "providing teacher-trainer grants." At the invitation of the U.S. Office of Education, the National University Extension Association (NUEA) submitted a proposal to provide intensive training for 1,060 ABE teacher trainers. The proposal was accepted and funded under the Economic Opportunity Act of 1964 at a cost totaling $1,055,000.

In preparing the program, NUEA recognized that the educationally disadvantaged have special learning characteristics. Thus, along with some basic teaching techniques, the ABE teacher must have additional techniques to establish the rapport and empathy necessary to teach the adult learner. Some of the characteristics of the adult learner are:

1. He tends to be more rigid in his thinking than a younger learner.
2. He usually requires a longer time to perform learning tasks.
3. He is more impatient in the pursuit of learning objectives.
4. He is used to being treated as a mature person and resents having teachers talk down to him.
5. He suffers more from being deprived of success than does the young learner and is motivated more by the usefulness of the material to be learned.

The adult learner also has some handicaps which cannot be ignored by the ABE teacher. A few of them are:

1. He has a lack of self confidence; he often feels inadequate and unable to learn and compete.
2. He is afraid of school—afraid of failure and of being tested.
3. He lives in conditions of economic poverty—he may have neither space nor quiet for outside reading; poor nutrition may cause apathy and sleepiness in class; other physical handicaps such as poor hearing or vision may not be corrected.
4. He is probably below average in scholastic aptitude.
5. He is culturally deprived—he may be completely unaware of the existence of nearby libraries, or be afraid to enter them, not knowing how to act.
6. His value system is different from that of adults of the middle class.
7. He has weak motivation because he has so far failed to achieve and recognize values of success and, thus, he may have an attitude of almost complete resignation.
8. He is unusually sensitive to nonverbal forms of communication because he has a limited vocabulary and, thus, he tends to judge more by actions than by words.

In 1966 there were less than 500 ABE teachers in the U.S. NUEA was able to support nine four-week training institutes for 982 ABE teacher-trainers. The institutes were held in each of the USOE regions at the following universities: University of Connecticut, State University of New York at Buffalo, North Carolina State University at Raleigh; Florida State University; Wayne State University, University of Missouri at Kansas City, University of Texas, University of Colorado, and University of California at Los Angeles. The program was then evaluated from data collected in the form of questionnaires, surveys, reports, and field interviews conducted during and after the institutes.

The curriculum which had been produced by the national curriculum advisory committee was meaningful and relevant to the participants, who were themselves considered to be an elite group having all the characteristics of master teachers. It was noted that, with the proper leadership by a federal agency, new technology and new instructional method and materials can be rapidly introduced into a teacher training program. However, it appeared that generally neither university staff, state and local administrators nor adult basic education teachers are proficient in the use of new equipment or instructional methods.

The author did recognize the mature way in which the current leadership at institutions of high education, state educational agencies and local schools selected the participants, made use of educational technology and innovative techniques and gave emphasis to curriculum. Pitchell also noted the mature response of the teachers who participated in the program, remarking on the emphasis given in the curriculum to understanding the ABE student and teaching reading and personal-social skills.

As a result of the program, NUEA made eight recommendations, which are listed below:

1. *National teacher training needs.* The Office of Education and other federal agencies should seriously explore the use of the accelerated national teacher training model for other program areas in which personnel are in short supply on a national scale.

2. *New technology and instructional methods.* While it will always be true that additional research and experimentation will be necessary in these fields, it is also true that line units must be thoroughly exposed to the capabilities of existing equipment and the results of recent experiments, The Office of Education should follow up its strong, coordinated effort in 1966 to introduce the use of new technology and instructional methods and materials. A special pre-institute program for university staff and state and local administrators who will supervise local ABE programs appears to be one of the indispensable elements of an effective overall program in the future.

3. *Graduate and undergraduate programs.* The serious deficiency of adequately trained teachers of adult illiterates is nationwide. The need for rapid growth of undergraduate and graduate curricula in adult basic education at universities in every region, as well as more summer institutes, to relieve current shortages is imperative. The Office of Education should internally review and coordinate its authority to fund summer institutes and strengthen undergraduate and graduate programs in this field.

4. *Follow-up system.* No four-week, educational program can teach people how to organize and administer specific, individual inservice training programs in a variety of situations. The training cannot be comprehensive enough, even when it goes beyond the teaching of principles and concepts. When there is an immediacy to the implementation of what is learned in a training program, some type of follow-up activity is necessary. Year-round availability of university specialists in adult basic education as resource persons or consultants to state and local personnel would go a long way toward maximizing the impact of the summer institutes.

5. *New types of institutes.* The need for additional types of institutes was perceived by program administrators and teachers alike. Planning for such institutes should be based on special, up-to-date surveys of regional, state and local

needs conducted by the Office of Education each year before proposals are initiated or funded.

6. *Length of institutes.* Participants in the summer institutes strongly recommend that the length of the institutes either be maintained at four weeks or increased in duration.

7. *Academic credit.* Participants were almost equally divided about their desire for academic credit for summer institute work. Participating institutions of higher education should be urged to operate the institutes on a non-credit basis but with options for credit upon the completion of such additional work as each institution may require for credit work.

8. *Lead time.* Experience at every level confirmed the need for at least a six-months lead time in order to prepare evaluation instruments properly, recruit and screen participants thoroughly, hire the best staff, obtain necessary equipment, and materials or utilize available consultants.

Volume II contains the appendix of materials which are of significance to the validity of the evaluation and to potential users of the data which were collected in the course of the study.

Standards and Evaluative Criteria: Community Colleges and Technical Institutes. Howard Thompson. State Board of Education, Raleigh, N.C. Department of Community Colleges. January 1969.

The basic conception and subsequent development of the guidelines for the evaluation of the community college and technical institute programs in North Carolina originated at the North Carolina State University at Raleigh six years ago. The principle on which the development of the evaluation guidelines was based was the complete involvement of the teaching, supervisory and administrative staff of the subject institutions. These people met as committees and held conferences during this six-year period, and developed these standards and evaluative criteria which are considered to be fair to use in judging the quantity and quality of the programs in North Carolina.

PLAIN TALK

Evaluation as the "closing curtain." Too often, evaluation and appraisal are the last gasps of a project or program. This condition may be the case with this last issue of *Research Visibility* for this school year, with its emphasis upon evaluation as it is related to research. No doubt, the evaluative process may be viewed from at least two points of inspection—the *logical* and the *psychological.* Traditionally in education we have adhered to the former and delayed appraisal until the *grand finale,* or last curtain. At other times we have smoke-screened the process with the comment that the best test or evaluation lies in the performance of the job under actual working conditions. This fact is to say that particularly with job skills and motor performance perhaps the most valid test is in the "doing" or success or failure.

It is well accepted that our evaluation should be continuous and on-going, and not reserved to pencil-and-paper testing techniques. At any rate, the press is on for more exacting evaluation of the progress of individual students and programs in *both* educational and economic terms. *Economic* evaluation is a late bloomer to vocationalists, and there may be a tendency to resist it behind the facade of global educational objectives which defy any appraisal Realistically in the marketplace and competition for funds to support education and all of the other public welfare programs, the vocational and technical education program must be described and justified in money-value (economic) terms.

There is every reason to believe that a dollars-and-cents appraisal of vocational education will go a long way toward proving that it is indispensable to both individual citizens and to our entire society. To momentarily forget the professional research challenge of evaluation and the improvement of programs, there is no escaping the permeating spirit of appraisal in the new VEA '68, its network of relationships in the functions of the national and state advisory councils, and the construction of annual and long-range plans of the States.

And it is later than we think in terms of another form of evaluation—*accreditation.* The term in this sense is used in its broadest form, i.e., accreditation of *all* programs of vocational and technical education, on all levels, in the public and private sectors, and in business and industry. There seems to be little doubt that evaluation and accreditation are intimately related. The current feeling is running to keep the two processes distinctively separated at least for formal purposes. Finally, there is the purist notion which parts company with formal evaluation and accreditation and places final faith in *self-evaluation* as the most beneficial process to students and programs. Obviously, the profession will have its opportunity, full blown, to flex its muscles on all three forms of the process. Possibly the most penetrating question of interest to researchers may be the extent to which research is involved in the total effort.

The promise of the future—some interests and new directions. "Plain Talk" concludes on an introspective and forward-looking note. Fortunately through the medium of the National Conference on Vocational Research held at Oklahoma City in February, there is present access to an informal statement of USOE Bureau of Research interests of the future. David S. Bushnell, director of the Division of Comprehensive and Vocational Education Research (DCVER), supplied *RV* with a copy of his presentation at the Oklahoma Conference. His informal, unofficial statement is both an appraisal of OE's efforts of the past and a general roadmap for the future; the statement will be

available in the report of the national conference in the near future.

Seven possible new areas of focus which are characterized by major social and cultural problems may make up OE's priorities of the future: (a) urban education, (b) vocational and occupational education, (c) equality of educational opportunity, (d) early learning, (e) relevance of general education, (f) professional and continuing education, and (g) educational finance, and organization. Note particularly the assignment of high priority to vocational research. Between the lines one is not hard put to relate vocational and technical education to the other points of focus with the possible exception of early learning.

The new framework is not Bushnell's personal hobbyhorse; it is the cooperative viewpoint of Bureau thinking, OE Research Advisory Council, and outside education researchers. All of the focus is intimate with the general purpose of improving instruction and the educational process. It should be made clear that the seven priorities are *not* official, not formally announced with Bushnell's statement, and certainly subject to change.

Looking Back at Priorities. Bushnell indicates the strong support of DCVER for individual research and development projects:

> Approximately 80 percent of the over $60 million spent on research and development activities during the last four years has been invested in individual studies and projects in contrast to investments in R & D Center activities or Research Coordinating Units at the state level. During this time spent, some six areas of emphasis have characterized the scope of vocational education research program as authorized under Section 4(c) of the Vocational Education Act of 1963. These six areas of priority emphasis are: (1) Program Evaluation, (2) Vocational Curriculum Improvement, (3) Vocational Education Resource Development, (4) Vocational Guidance and Career Choice Processes, (5) Organizational and Administrative Practices, and (6) New Careers.

The above have been the considerations of DCVER during the past four years. Bushnell continues, "These priorities, of course, have been modified and adapted to the discoveries and results of research sponsored during this four-year period. It is our expectation that even these priorities will be substantially modified and overhauled during a period during 1970 in line with Bureau-wide priority setting effort during that fiscal year."

RV's commentary on the Bushnell statement is both enthusiastic and speculative, the latter from a legislative-political point of view especially. Certainly in the infant stages of vocational research since 1964, DCVER had to walk before it could run, and research sponsorship is a strenuous, expensive business. It had to do business via the proposal-making process and grantsmanship, and the sophisticated proposers could get richer and the more mundane poorer.

In terms of accomplishments, DCVER has operating two Research and Development Centers, some 47 Research Coordinating Units throughout this country, a Vocational Education Information Clearinghouse, and 5,000 teachers, administrators and researchers have been trained through 4(c) grants. This product is meritorious, and the momentum of this start should not be lost. The new VEA '68 may call a different tune after the legislation is fully assimilated and the regulations carved out. Undoubtedly, the new law will require new sign-off authority on the parts of the Bureau of Research and the Bureau of Adult, Vocational and Library Services. Hopefully, this process will require close coordination and communication both in-house and between Federal and State echelons of operation.

Politically, there is a different cat to skin, and if the situation is not corrected most of the posting of priorities and past progress can be spared. The research section 131(b) of VEA '68 (formerly 4(c) of Public Law 88-210) was authorized for $56,500,000, but current appropriations for it are $1,100,000. In terms of the nature and amount of vocational research needed the appropriation is far less than meager. Unless the vocational community and its friends invite the attention of Congress to this enormous disparity and have it corrected a large segment of the current research enterprise will be in serious trouble, possibly abandonment of at least a noble start of the past four or five years.

The implication should not be lost that *state* support should also increase and share in the cost of the research effort. Notwithstanding the possible gloomy outlook of the predicament, the lesson we should learn is crystal clear. Research visibility has a political counterpart; its importance, value and relationship to vocational and technical education must be made truly *visible* to the members of Congress. If our public relations in research are not up to this task and accountability, we will have little to worry about—little support and appropriations, and little new knowledge to guide the program of tomorrow.

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ERIC—Educational Resources Information Center, EDRS, c/o NCR Co., 4936 Fairmont Ave., Bethesda, Maryland 20014. Copies are priced according to the number of pages. The MF price in the listing is for microfiche; the HC price is for paper copies. Send remittance with order directly to ERIC-EDRS and specify the accession number (ED plus a 6-digit number) given in the listing. *How to Use ERIC*, a recent brochure prepared by the Office of Education, is available from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402; the catalog number is FS 5.212.12037; price: 20 cents.

GPO—Government Printing Office. Send orders directly to Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402, with remittance for specified amount.

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